

Published in final edited form as:

Health Educ Behav. 2013 August ; 40(4): 384–391. doi:10.1177/1090198112440010.

Predicting Condom Use Attitudes, Norms, and Control Beliefs in Hispanic Problem Behavior Youth: The Effects of Family Functioning and Parent–Adolescent Communication About Sex on Condom Use

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Abstract

Hispanic problem behavior youth are at an increased risk of engaging in HIV risk behaviors, including low condom use. However, relatively little research has examined factors that affect condom use in this population. Although research indicates that family processes, such as higher levels of family functioning and open parent–adolescent communication about sex, and condom use attitudes, norms, and control beliefs as depicted by the theory of planned behavior have an effect on condom use behaviors, the combination of the two factors has received minimal attention. The purpose of this study was to examine the effect of family functioning on condom use intentions and behaviors through communication about sex and condom use attitudes, parental norms, and control beliefs. A cross-sectional study of 171 predominately male (73.1%) sexually active Hispanic problem behavior adolescents (mean age = 14.88 years) was conducted. Structural equation modeling was used to test the study hypothesis. Findings largely support the overall model and suggest that family functioning had an indirect effect on condom use intention and behavior through communication about sex, condom use attitudes, and control beliefs. Family functioning, however, did not have an indirect effect on condom use intention and behavior through communication about sex and parental norms. Implications for prevention science and future research are discussed.

Keywords

adolescents; behavioral theories; HIV/AIDS; Latino; race/ethnicity; sex behavior; theory of planned behavior

Adolescence represents a challenging developmental stage characterized by increased risk taking, including HIV risk behaviors. In fact, approximately 20% of all new cases of HIV occur in persons aged between 13 and 24 years (Centers for Disease Control and Prevention [CDC], 2008). Hispanic youth are disproportionately represented among HIV cases in adolescents. For example, although Hispanic adolescents represent approximately 15% of those aged between 13 and 19 years, they account for 20% of male and 18% of female

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

adolescents living with HIV in the same age-group, respectively (CDC, 2010a). Hispanic problem behavior youth, defined as Hispanic adolescents who display conduct disorders, aggression, and delinquency (Fulkerson, Pasch, Perry, & Komro, 2008; Gayles, Coatsworth, Pantin, & Szapocznik, 2009), are at an even greater risk of engaging in HIV risk behaviors, including inconsistent condom use, multiple sex partners, and sex while intoxicated or under the influence of drugs (Romero et al., 2007).

One mechanism by which to prevent the acquisition and transmission of HIV/AIDS is through consistent condom use. Unfortunately, findings from the Youth Risk Behavioral Survey (CDC, 2010b) reveal that Hispanic adolescents report lower condom use at last sexual intercourse (54.9%), relative to both non-Hispanic White (63.3%) and African American youth (62.4%). Hispanic problem behavior youth are even more likely to report low condom use (Teplin, Mericle, McClelland, & Abram, 2003). In spite of these inequities, a dearth of research exists aimed at identifying the mechanisms by which to prevent/reduce HIV infection in this population, particularly those pathways that promote condom use. To prevent HIV risk behaviors among Hispanic problem behavior youth, it is important to determine factors related to these behaviors.

A substantial amount of research has highlighted that higher levels of family functioning and open parent–adolescent communication about sex are associated with engagement in fewer HIV risk behaviors (Atienzo, Walker, Campero, Lamadrid-Figueroa, & Gutierrez, 2009; Pantin et al., 2009; Prado et al., 2007). In addition, positive condom use attitudes, norms and control beliefs as depicted by the theory of planned behavior (TPB) can also prevent/reduce HIV risk behaviors (Albarracan, Johnson, Fishbein, & Muellerleile, 2001; Buhi & Goodson, 2007). However, the combination of the two mechanisms and their association with HIV risk behaviors has received minimal attention. Therefore, the purpose of this study was to examine the indirect association between family functioning and condom use through communication about sex and condom use attitudes, parental norms, control beliefs, and intentions in a sample of Hispanic problem behavior youth, defined as Hispanic youth who had clinical levels of conduct disorder, aggression, or attention problems (Pantin et al., 2009) or who had committed an arrestable offense (Prado et al., 2012).

Several theories have been posited to conceptualize HIV risk behaviors in adolescents, including TPB (Ajzen, 1991), which postulates that the strongest determinant of human behaviors are intentions. Intentions, in turn, are determined by attitudes, norms, and control beliefs about the behavior. Attitudes are personal beliefs about the behavior, norms are beliefs about what others feel about the behavior, and control beliefs are perceptions about one's ability to perform the behavior. TPB has been used to explain sexual behaviors in various ethnic adolescent populations (Bryan, Fisher, & Fisher, 2002; Cha, Doswell, Kim, Charron-Prochownik, & Patrick, 2007; Gebhardt, Kuyper, & Greunsven, 2003; Jemmott, Jemmott, & Fong, 1998). For instance, TPB has been used to explain delayed sexual initiation among African American youth (Jemmott et al., 1998) and safer sex discussions and condom procurement in minority inner-city youth (Bryan et al., 2002). TBP has also been useful in explaining the effects of condom use attitudes, norms, and control beliefs on condom use in Hispanic adolescents (Villarruel, Jemmott, Jemmott, & Ronis, 2004). However, little is known with respect to factors that might influence condom use attitudes, norms, and control beliefs. For example, given that family is a salient and central theme in the Hispanic culture (Martinez & Eddy, 2005; Pantin et al., 2009; Prado et al., 2010; Villarruel, Jemmott, & Jemmott, 2006), family functioning may be important in this regard.

One possible mechanism by which proper family functioning may promote positive condom use attitudes, norms, and control beliefs is by increasing parent–adolescent communication about sex. In fact, several indicators of proper family functioning, including an open pattern

of general communication and higher levels of family cohesion, have been linked to increased levels of sex communication between parents and adolescents (Jaccard, Dittus, & Gordon, 2000; Martino, Elliott, Corona, Kanouse, & Schuster, 2008). Open parent–adolescent communication about sex in turn may promote positive condom use attitudes, parental norms, and control beliefs. This follows from evidence suggesting that adolescents who openly communicate about sex with parents have higher perceptions that parents approve of condom use (Parkes, Henderson, Wight, & Nixon, 2011) and also that they could control condom use (DiClemente et al., 2001). Adolescents who communicate about sex with parents are also more likely to have positive attitudes about condoms, including that they are reliable and protect against sexually transmitted diseases (Halpern-Felsher, Kropp, Boyer, Tschann, & Ellen, 2004). Hence, we hypothesize that higher levels of family functioning will be indirectly related to greater condom use through three pathways: (a) by increasing open parent–adolescent sex communication and positive condom use control beliefs and intentions, (b) by increasing open parent–adolescent sex communication and positive condom use attitudes and intentions, and (c) by increasing open parent–adolescent sex communication and positive condom use parental norms and intentions.

Method

Data for this study were taken from baseline assessments of two randomized clinical trials conducted between January 2004 and July 2008 (Pantin et al., 2009) and between August 2009 to June 2011 (Prado et al., 2012). Both trials aimed to test the efficacy of *Familias Unidas*, a Hispanic-specific culturally sensitive intervention that has been found to be efficacious in preventing and reducing HIV risk behaviors among adolescents. The two trials were independent of each other such that adolescents who participated in the first trial could not have participated in the second trial.

Participants

To be included in each efficacy trial, participants had to be of Hispanic origin (defined as at least one parent born in a Spanish-speaking country), had to have a parent or primary caregiver who was willing to participate, and had to have no plans to move out of South Florida during the study period. In addition, for the first efficacy trial (Pantin et al., 2009), participants had to be in the eighth grade and be identified as displaying problem behaviors. Problem behavior youth were identified in two steps. First, the adolescent had to be identified by school counselors as having at least “mild problems” on one of three Revised Behavioral Problem Checklist (Quay & Peterson, 1987) subscales (conduct disorder, socialized aggression, and attention problems). Second, the adolescent had to be rated by their parents as >1 standard deviation above the nonclinical normed mean (Quay & Peterson, 1987) on at least one of the three Revised Behavioral Problem Checklist subscales (conduct disorder, socialized aggression, and attention problems). For the second efficacy trial, participants had to be identified as delinquent youth. Delinquency was defined as having been arrested one or more times or as having “level III behavioral problems” as defined by the Miami-Dade County Public School system (i.e., assault/ threat against a non-staff member, breaking and entering/burglary, fighting (serious), hazing, possession or use of alcohol and/or controlled substances, possession of simulated weapons, trespassing, and vandalism). In all, 469 participants were enrolled across the two studies (242 and 227 participants in the first and second trial, respectively). Because the current study focuses on condom use, only those youth who reported being sexually active at baseline ($n = 171$) were included.

Measures

Participants completed the assessment battery in the language of their choice (English or Spanish) using Audio Computer-Assisted Self-Interviewing software technology (Turner et al., 1998).

Demographics—Adolescents completed a demographic questionnaire that collected information on age, gender, and country of birth. Additionally, parents provided income information.

Family functioning—Four family processes were used to assess family functioning: parent–adolescent communication, family communication, parental involvement, and positive parenting. The Family Relations Scale (Tolan, Gorman-Smith, Huesmann, & Zelli, 1997) was used to measure family communication (3 items; $\alpha = .736$). A sample question is “My family knows what I mean when I say something.” Response choices ranged from 1 = *not true at all* to 3 = *true a lot*. In addition, The Parent-Adolescent Communication Scale (Barnes & Olson, 1985) was used to measure parent–adolescent communication (20 items; $\alpha = .83$). A sample question is “I can discuss my beliefs with my mother/father without feeling restrained or embarrassed.” Response choices ranged from 1 = *strongly disagree* to 5 = *strongly agree*. The Parenting Practices Scale (Gorman-Smith, Tolan, Zelli, & Huesmann, 1996), with response choices ranging from 1 = *almost never* to 3 = *often*, was used to measure positive parenting, rewards, and acknowledgments given in response to positive behaviors (9 items; $\alpha = .85$) and to measure parental involvement (17 items; $\alpha = .87$). A sample positive parenting question is “When you have done something that your parents like or approve of, how often does your mother say something nice about it?” A sample parental involvement question is “How often do you and your mom do things together at home?”

Parent–adolescent communication about sex—The Parent-Adolescent Communication about Sex Scale (Sullivan, Jaramillo, Moreau, & Meyer-Bahlburg, 1999) was used to measure parent–adolescent communication about sex (14 items; $\alpha = .80$). A sample question is “I can discuss sex with my parents without feeling embarrassed.” Each item had response choices that ranged from 1 = *strongly agree* to 4 = *strongly disagree*.

Condom use attitudes, parental norms, and control beliefs—Condom use attitudes, parental norms, and control beliefs were measured using the Sexual Behavior Scale (Jemmott et al., 1998). Each item within this instrument had response choices that ranged from 1 = *strongly disagree* to 5 = *strongly agree*. Condom use attitudes was measured using 12 items ($\alpha = .80$). A sample question is “If I used a condom, sex would not feel as good.” Condom use parental norms ($\alpha = .96$) was measured by two questions: “Would your mother (or father) approve or disapprove of you using a condom if you have sex in the next 3 months?” Condom use control beliefs (15 items; $\alpha = .85$) was measured by combining the perceived control about condom use (10 items; $\alpha = .882$) and condom use efficacy (5 items; $\alpha = .62$) subscales (Montano & Kasprzyk, 2008). The correlation between these two subscales was $p = .34$ ($p < .001$). A sample question of the perceived control about condom use subscale is “I can’t talk to my partner about sex and using condoms.” A sample question of the condom efficacy subscale is “It is hard for me to get condoms.” Condom use intentions was measured with 2 items ($\alpha = .76$). A sample item is “I plan to use condoms if I have sex in the next 3 months.”

Condom use—Condom use at last sexual intercourse is a widely used indicator of general condom use and has been found to serve as a valid proxy for longer term use (Younge et al., 2008). In the current study, one item from the Sexual Behavior Scale (Jemmott et al., 1998) was used to measure condom use at last sexual intercourse: “The last time you had sex did

you use a condom? (yes/no).” The outcome was coded as 0 if the respondent answered affirmatively to using condom (i.e., no risk) and 1 if they had not (i.e., risky).

Data Analytic Plan

The data analytic plan proceeded in four steps. First, confirmatory factor analysis was conducted to determine if the four family factors (parent–adolescent communication, family communication, parental involvement, and positive parenting) could be combined viably to attain one latent factor (i.e., family functioning). Second, univariate analysis was conducted for each of the direct associations in the hypothesized model, along with direct associations between family functioning and each of the study variables. Third, structural equation modeling was used to test the hypothesized model. The direct associations between family functioning and each of the study variables were also tested. Two fit indices were used to evaluate the model fit: the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). A good model fit is indicated by a RMSEA value less than .06 and a CFI value greater than .95 (Byrne, 2001). The chi-square goodness-of-fit statistic is also reported, but it should be interpreted with caution given its sensitivity to sample size. Finally, hypothesized mediation pathways within the overall model were tested using the asymmetric distribution of product test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). In this methodology, the constitutive pathways are multiplied, and if the confidence interval for this product does not include 0, then partial mediation is assumed. More specifically, the MODEL INDIRECT command in Mplus (Muthén & Muthén, 2010) was used to test for mediation pathways that lead from family functioning to condom use at last sexual intercourse.

Results

Of the 171 adolescents in the current study, 48 were from Trial 1 and 123 were from Trial 2. Demographic and study variables for the total sample and each trial are presented in Table 1. Participants from the two trials were similar with regard to demographic factors. However, as a result of the recruitment strategies, Trial 2 participants had a significantly higher mean age (15.18 years, $SD = 1.20$) than Trial 1 participants (14.04 years, $SD = 0.74$). Family functioning and condom use variables were also similar across the two trials. The only exception was condom use parental norms ($p = .048$). Additionally, univariate analysis revealed that most of the study variables were significantly related to each other with standardized beta coefficients (β) ranging from .16 to .56. The only exception was family functioning, which was not related to parental norms or condom use, $\beta = .05$ and .11, respectively.

Measurement Model of Family Functioning

All four family variables (family communication, parent–adolescent communication, positive parenting, and parental involvement) loaded significantly to produce one latent construct with the following factor loadings: .79, .71, .63, and .76, respectively. The model fit indices indicated an adequate fit, CFI = .99, RMSEA = .001, $\chi^2 = .006$ ($p = .94$).

Structural Equation Modeling

Both the CFI (.98) and RMSEA (.035) indicated that the hypothesized model provided an adequate fit for the data. The χ^2 , with 13 degrees of freedom (df) and a value of 15.78 ($p = .26$), also suggested that the model was a good fit.

Direct associations—Family functioning was not directly associated with any of the study variables, with the exception of parent–adolescent communication about sex. Higher levels of family functioning was directly associated with higher levels of parent–adolescent

communication about sex ($\beta = .53, p < .001$; Figure 1). Higher levels of parent–adolescent communication about sex also directly and positively associated with condom use attitudes ($\beta = .33, p < .001$), parental norms ($\beta = .21, p < .001$), and control beliefs ($\beta = .41, p < .001$). Additionally, both condom attitudes ($\beta = .37, p < .001$) and control beliefs ($\beta = .50, p < .001$) were positively and directly associated with condom use intentions. However, condom use parental norms was not significant associated with condom use intentions ($\beta = .05, p = .40$). Finally, intentions to use condoms was negatively and significantly associated with condom use at last sex ($\beta = -.57, p < .001$). Therefore, as intentions to use condoms increased, so did condom use at last sexual intercourse.

Indirect associations—Two of the three hypothesized mediation pathways from family functioning to condom use at last sex were statistically significant. Specifically, the association between family functioning and condom use at last sex was mediated by parent–adolescent communication about sex, condom use attitudes, and intentions ($\beta = -.04$, 95% confidence interval [CI] = $-.07, -.01$). The association between family functioning and condom use at last sex was also mediated by communication about sex and condom use control beliefs and intentions ($\beta = -.06$, 95% CI = $-.11, -.01$). However, it was not mediated by communication about sex and condom use parental norms and intentions ($\beta = -.003$, 95% CI = $-.01, .01$).

Finally, it is important to note that a model was also tested with direct pathways from condom use attitudes, parental norms, and control beliefs to condom use at last sex. However, the original model and the model with the additional pathways had similar fit indices (CFI = .98, RMSEA = .03) and was not significantly different from each other ($\Delta\chi^2 = 5.87, \Delta df = 3, p = .12$). Furthermore, only one of the three added pathways was significant. Specifically, the pathway from condom use attitudes to condom use at last sex was significant ($\beta = -.27, p = .01$), whereas the pathways from parental norms ($\beta = .06, p = .54$) and control beliefs ($\beta = -.06, p = .72$) to condom use at last sex were not significant. To keep the model parsimonious, we have reported only the results of the original model.

Discussion

The purpose of this study was to examine the indirect association between family functioning and condom use through parent–adolescent communication about sex and condom use attitudes, parental norms, control beliefs, and intentions. To our knowledge, this study is among the first to examine the association between family functioning and condom use behaviors from a TPB framework. Findings from this study largely support the hypothesized model. Specifically, study findings highlight that family functioning was indirectly related to condom use through communication about sex and condom use attitudes, control beliefs, and intentions. Hence, preventive interventions seeking to improve family processes may also promote condom use attitudes and control beliefs and consequently increase condom use intentions and behavior.

In terms of the direct associations, the study was largely consistent with previous research. For instance, several studies have shown that adolescents who report higher levels of family functioning are more likely to communicate with parents about sex (Jaccard et al., 2000; Martino et al., 2008; Parera & Su is, 2004). Additionally, higher levels of communication about sex have been linked to positive condom use attitudes, parental norms, and control beliefs (DiClemente et al., 2001; Halpern-Felsher et al., 2004; Parkes et al., 2011). Finally, the finding that positive condom use attitudes and control beliefs were directly related to greater intentions to use condoms stem directly from TPB and are consistent with previous research (Albarracan et al., 2001; Buhi & Goodson, 2007; Villarruel et al., 2004).

Contrary to what we expected, however, we did not find a link between parental norms and condom use intentions. One possible explanation for the lack of association is that peers become more powerful agents of sexual socialization as compared with parents during adolescence. Indeed, peer norms have been found to more strongly influence adolescents' sexual behaviors as compared with parental norms (Doswell, Braxter, Cha, & Kim, 2011). Additionally, meta-analysis has revealed that compared with attitudes and control beliefs, norms is frequently found to be the weakest predictor of behavioral intentions, often because of measurement strategies (Armitage & Conner, 2001). Therefore, an additional explanation for the lack of association between parental norms and condom use intentions could be a less than ideal measure of parental norms.

Findings from this study should be interpreted in light of several study limitations. First, the sample consisted of Hispanic problem behavior adolescents, which limits the ability to generalize study findings to all adolescent or Hispanic populations. Second, this study used a cross-sectional design. Thus, the temporal nature of the relationships cannot be inferred. Future studies should include longitudinal designs to further explain the effects between family functioning on condom use through attitudes, parental norms, and control beliefs. A third limitation of the current study is the use of self-reported measures, which increases the potential for participants to misreport on sexual behaviors. However, the use of Audio Computer-Assisted Self-Interviewing software, which limits the contact between respondents and assessors, aims to mitigate this issue. Notwithstanding these limitations, our study found family functioning to have an association with condom use through condom use attitudes and control beliefs.

Practical Implications

This study is an important step in understanding pathways that promote condom use in Hispanic problem behavior adolescents. Specifically, this study seem to suggest that higher levels of family functioning and parent–adolescent communication about sex can indirectly promote greater condom use behavior through positive condom use attitudes, control beliefs, and intentions. As such, public health practitioners who seek to reduce or prevent HIV risk behaviors and promote positive condom use attitudes, control beliefs, and intentions could possibly focus on improving family functioning and parent–adolescent communication about sex. For instance, provided that the results of this study are replicated in longitudinal prospective studies, this study suggests that efforts should be made to strengthen family bonds and generate a family environment characterized by mutual warmth, closeness, and connectedness in order to promote positive condom use attitudes, control beliefs, intentions, and behavior. Again, assuming the results of the current study are replicated in longitudinal prospective studies, this study may also support HIV prevention strategies that give parents the necessary skills to effectively mitigate many of the barriers of effective parent–adolescent communication about sex, such as embarrassment and fear of encouraging sexual activity (Jaccard, Dodge, & Dittus, 2002).

Acknowledgments

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article:

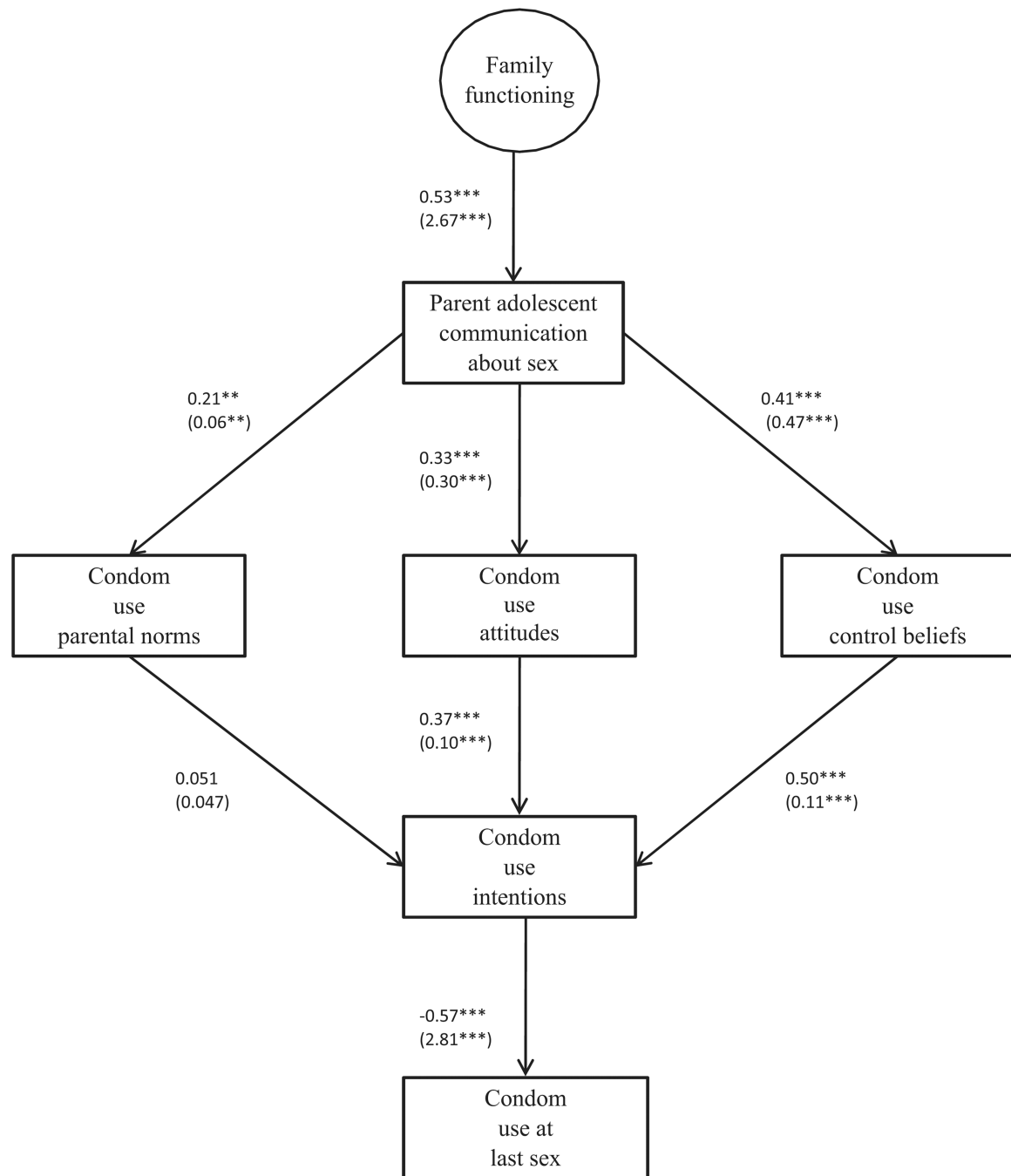
This study was supported by National Institute on Drug Abuse, Grant No. DA017462 awarded to Hilda Pantin and Grant Nos. R01DA025894, R01 DA025192-02S1, R01 DA025192, and U01PS0000671 awarded to Guillermo Prado.

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**Figure 1.**

Results of hypothesized model linking family functioning to condom use through communication about sex and condom use attitudes, norms, control beliefs, and intentions. *Note.* Path coefficients are presented: above (standardized), below (unstandardized).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1

Demographic and Study Variables for the Total Sample and Each Study Trial

Variable	Total, N = 171			Trial 1, N = 48			Trial 2, N = 123			χ^2 or F	p
	N (%)	Mean (SD)	N (%)	Mean (SD)	N (%)	Mean (SD)	N (%)	Mean (SD)	N (%)		
Male	122 (73.1)		36 (80.0)		86 (69.9)		86 (69.9)		1.68		.19
Age (years)		14.88 (1.20)		14.04 (0.74)		15.18 (1.20)		15.18 (1.20)		5.99	>.001
U.S. born	95 (56.7)		22 (50)		73 (59.3)		73 (59.3)		1.16		.28
Family income <\$30,000	138 (80.7)		42 (87.5)		96 (78.0)		96 (78.0)		1.98		.16
Parental involvement		36.47 (7.68)		37.92 (7.74)		35.96 (7.62)		35.96 (7.62)		2.02	.16
Positive parenting		17.13 (5.70)		16.87 (6.04)		17.24 (5.59)		17.24 (5.59)		0.14	.71
Family communication		7.50 (2.28)		7.44 (2.37)		7.53 (2.25)		7.53 (2.25)		0.06	.55
Parent-adolescent communication		63.71 (13.41)		62.70 (13.30)		64.10 (13.49)		64.10 (13.49)		0.36	.88
Parent-adolescent communication about sex		30.07 (7.9)		30.12 (7.27)		30.05 (8.22)		30.05 (8.22)		1.50	.22
Control beliefs		52.38 (9.30)		53.57 (8.52)		51.91 (9.58)		51.91 (9.58)		1.10	.30
Parental norms		8.32 (2.18)		8.96 (1.44)		8.07 (2.37)		8.07 (2.37)		5.83	.05
Attitudes		43.52 (7.50)		43.46 (6.96)		43.55 (7.73)		43.55 (7.73)		0.01	.95
Condom use intentions		7.90 (2.11)		8.10 (1.93)		7.82 (2.18)		7.82 (2.18)		0.62	.43
Condom use at last sex	112 (64.5)		35 (72.9)		77 (62.6)		77 (62.6)		1.63		.20